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HNPH/51-9-5-117

September 26, 1995

Project Number 1412

Mr. Lonnie Monaco
Naval Facilities Engineering Command (NAVFACENGCOM)
Northern Division
Environmental Contracts Branch, Mailstop No. 82
10 Industrial Highway
Lester, Pennsylvania 19113

Reference: CLEAN Contract No. N62472-90-D-1298
Contract Task Order (CTO) No. 159

Subject: Revised Subsurface Soil Investigation for Area C
Phase III Remedial Investigation/Feasibility Study (RI/FS)
Naval Air Warfare Center (NAWC) Warminster, Pennsylvania

Dear Mr. Monaco:

This letter addresses the revised subsurface soil investigation for Area C at NAWC Warminster as part of Phase III RI activities. Brown & Root Environmental, a division of Halliburton NUS Corporation (B & R Environmental), has incorporated comments received from United States Environmental Protection Agency (EPA) officials to formulate this approach. This approach reflects the agreements reached during a site reconnaissance with EPA on September 21, 1995. The revised approach differs from the original B & R Environmental proposal for this area (see HNPH\51-7-5-81 dated July 28, 1995) and addresses EPA comments on this subject dated September 7, 1995..

The proposed subsurface soil sampling approach for each site of concern within Area C is described below. Additional surface soil sampling for Site 8 is also explained. Note that subsurface soils at other potential areas of concern within Area C will not be investigated as part of Phase III RI activities, but will likely be deferred to the Phase II environmental baseline survey work.

Site 8

Attachment I shows the proposed subsurface soil boring locations for Site 8. A total of 15 borings are planned for this area, including

- Three borings along the swale where runoff from the runway area discharges into the concrete culvert north of Site 8. Two of these borings correspond to the soil gas anomalies identified by SMC Martin during the Phase I RI and are near Wells DG-11 and DG-14. The remaining boring is located between the northwestern edge of the Site 8 runway and the boring near Well DG-14.

- One boring within the recent fire training area.

- Two borings within the old fire training area east of where the mock-up airplane was located. These borings will be located within a former pit (i.e., possible P5) identified by the Environmental Photographic Interpretation Center (EPIC) through aerial photograph analysis.

- Five borings along the western edge of the Site 8 runway. Two of these borings are located west of the open structure (S1) south of the old fire training area. The remaining three borings are located west of three former pits (i.e., P2, P3, and P4) identified by EPIC. These five borings are approximately 40 feet part beginning near S1 and ending near the significant soil gas anomaly identified by SMC Martin in 1991 just west of the old fire training area.

- Three borings within the three former pits. One boring will be drilled through P4; one boring will be advanced between P2 and P3; and the third boring will be drilled downgradient of P3.

- One boring along the eastern edge of the Site 8 runway near Well BG-5.

At least one sample will be obtained from each boring within Site 8. Soil boring samples will be selected for analysis based on field screening for organics and visible evidence of potential contamination. If no evidence of potential contamination is found, a sample will be taken from directly above the deepest depth of non-native materials (if present) or the bottom of the boring.

All subsurface soil samples will be analyzed for TCL semivolatile organics and TAL metals. Samples collected from the following locations will also be tested for TCL volatile organics, pesticides, PCBs, and dioxin, except where noted:

- The two borings west of S1.

- The six borings within the Site 8 runway. Samples from these borings will <u>not</u> be analyzed for TCL volatile organics, pesticides, or PCBs.

- The single boring located between the northwestern edge of the runway and Well DG-14.

- The single boring along the eastern edge of the runway near Well BG-5.

If more than one sample is collected from any of these borings, only one sample will be analyzed for these parameters. In general, the shallower subsurface soil sample will be selected if two or more samples are collected from the same boring, unless another sample shows visible evidence of potential contamination. Other samples will be analyzed for TCL volatile organics, pesticides, PCBs, and dioxin if they appear to be potentially contaminated, based on visual observations and photoionization detector (PID) readings.

In addition to these borings, five surface soil samples will be collected along the western edge of the existing runway and one sample will be taken along the eastern edge. These sample locations will correspond to subsurface soil boring locations. The intent of collecting these samples is to determine whether a release of hazardous substances occurred on either side of the Site 8 runway.

All surface soil samples will be analyzed for TCL volatile organics, TAL metals, and dioxin. The sample collected along the eastern edge of the runway will also be tested for TCL semivolatile organics, pesticides, and PCBs. Three of the five samples taken from the western edge of the runway will also be analyzed for these parameters, including samples from the two locations west of S1 and from the location nearest the soil gas anomaly identified by SMC Martin.

With respect to the electromagnetic (EM) anomaly identified during Phase I RI work west of Well HN-45I (see Attachment I), B & R Environmental plans to review OHM's field notes for the groundwater transfer piping trench excavated in this area. If these field notes are inconclusive, B & R Environmental plans to conduct a limited EM survey in the vicinity of this anomaly. During Phase I, the EM survey indicated that no large buried metallic objects were present in this area, and that this area may contain disseminated and highly-oxidized metal or a bedrock pinnacle. Based on the results of the limited EM survey, a proposed subsurface investigation plan for this anomaly may be developed. This plan will be provided under separate cover at a later date.

Maintenance Area

There are no significant changes to the original subsurface soil investigation approach for this site. A total of two borings are planned for this area near the soil gas sample location where 1,1-DCA and cis-1,2-DCE were found. These borings will be 25 feet apart with the second boring to the east of the soil gas location.

Two samples will be obtained from each boring within this area. Soil boring samples will be selected for analysis based on field screening for organics and visible evidence of potential contamination. If no evidence of potential contamination is found, samples will be taken from directly above the deepest depth of non-native materials (if present) or the base of the boring, and from half the distance up from this sample depth to the ground surface.

All samples will be analyzed for TCL volatile organics and TAL metals. An optional analysis includes TCL semivolatile organics. This analysis will only be performed if the samples appear to be potentially contaminated, based on visual observations and PID readings.

Base Commander's Tile Field

Three borings are planned for this area, including

- Two borings immediately downgradient of the tile field corresponding to soil gas locations with elevated PCE concentrations.
- One boring approximately 50 feet downgradient of the tile field according to the direction of groundwater flow in this area.

One sample will be obtained from each boring within this area. Soil boring samples will be selected for analysis based on field screening for organics and visible evidence of potential contamination. If no evidence of potential contamination is found, samples will be taken from directly above the deepest depth of non-native materials (if present) or the base of the boring.

All samples will be analyzed for TCL volatile organics and TAL metals. Optional analyses include TCL semivolatile organics and PCBs. These analyses will only be performed if the samples appear to be potentially contaminated, based on visual observations and PID readings.

Copies of this letter are being provided to NAWC Warminster, EPA, and Pennsylvania Department of Environmental Protection (PADEP) officials. B & R Environmental has already started work in Area C and anticipates this work will be completed by October 4, 1995.

Please contact Jeff Orient or me if you have any questions or comments.

Sincerely,

Neil Teamerson

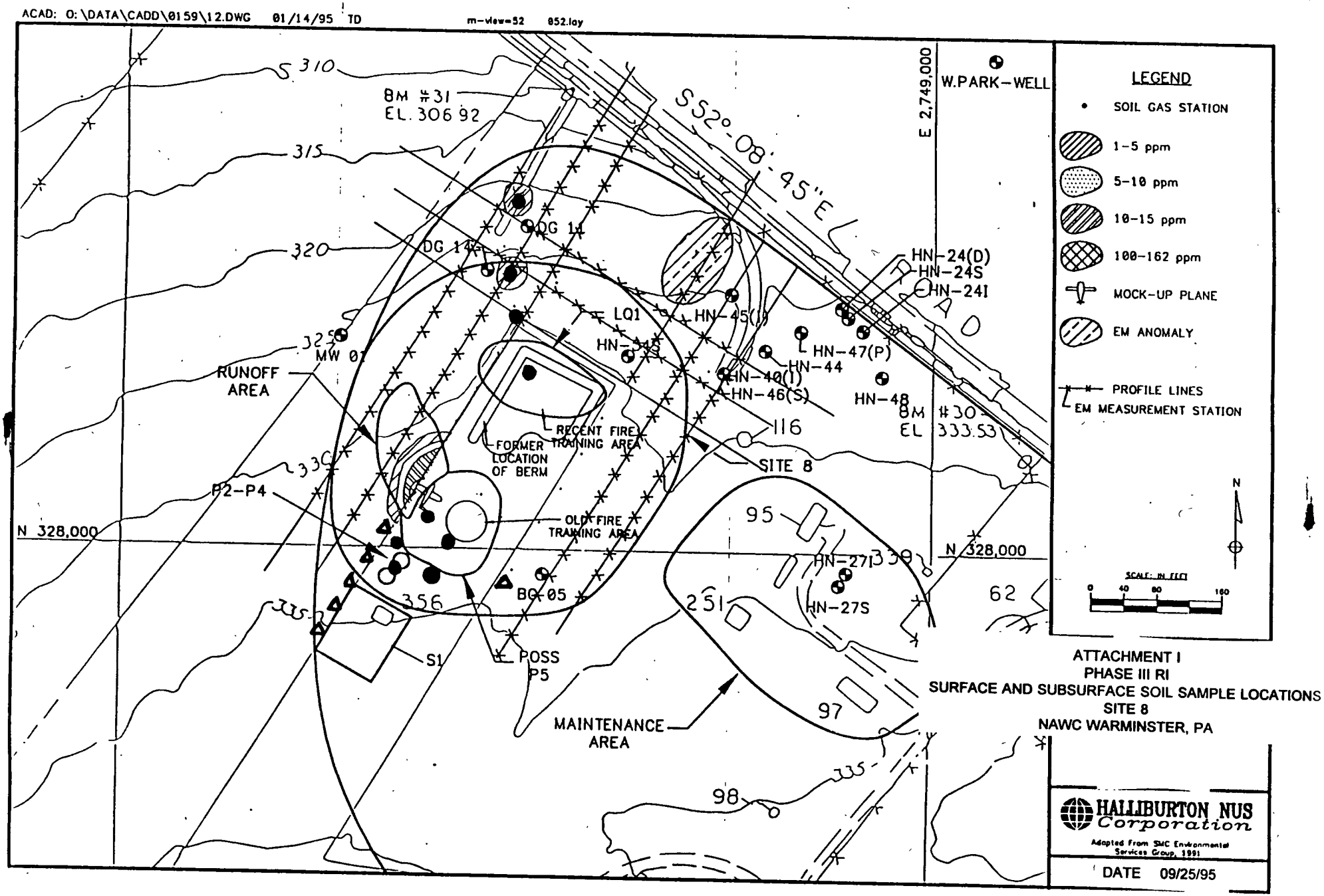
Neil Teamerson
Phase III RI Coordinator

ANT/vb

Attachments

c: Raymond Mannella (NAVFACENGCOM)
Thomas Ames (NAWC Warminster)
Kathryn Davies (EPA Region III)
Darius Ostrauskas (EPA Region III)
David Kennedy (PADEP)
Jeffrey Orient (B&R Environmental)
Michael Turco (B&R Environmental) (without attachments)

ATTACHMENT I
SURFACE AND SUBSURFACE SOIL SAMPLE LOCATIONS
PHASE III RI
SITE 8



ATTACHMENT I
PHASE III RI
SURFACE AND SUBSURFACE SOIL SAMPLE LOCATIONS
SITE 8
NAWC WARMINSTER, PA

HALLIBURTON NUS Corporation

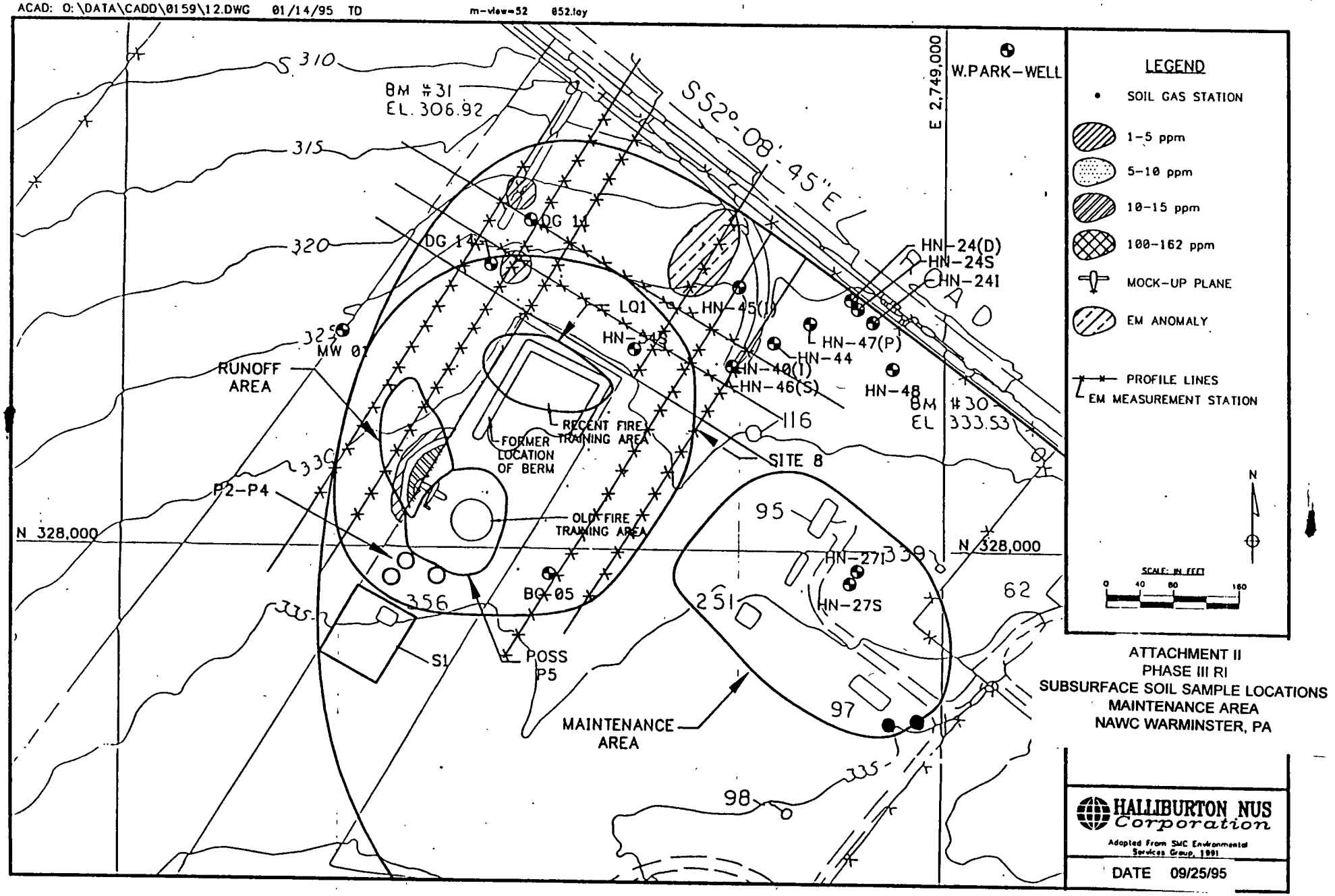
Adapted From SMC Environmental Services Group, 1991

DATE 09/25/95

PROPOSED SUBSURFACE SOIL BORING

Δ PROPOSED SURFACE/SUBSURFACE SOIL LOCATION

ATTACHMENT II
SUBSURFACE SOIL SAMPLE LOCATIONS
PHASE III RI
MAINTENANCE AREA



ATTACHMENT II
PHASE III RI
SUBSURFACE SOIL SAMPLE LOCATIONS
MAINTENANCE AREA
NAWC WARMINSTER, PA

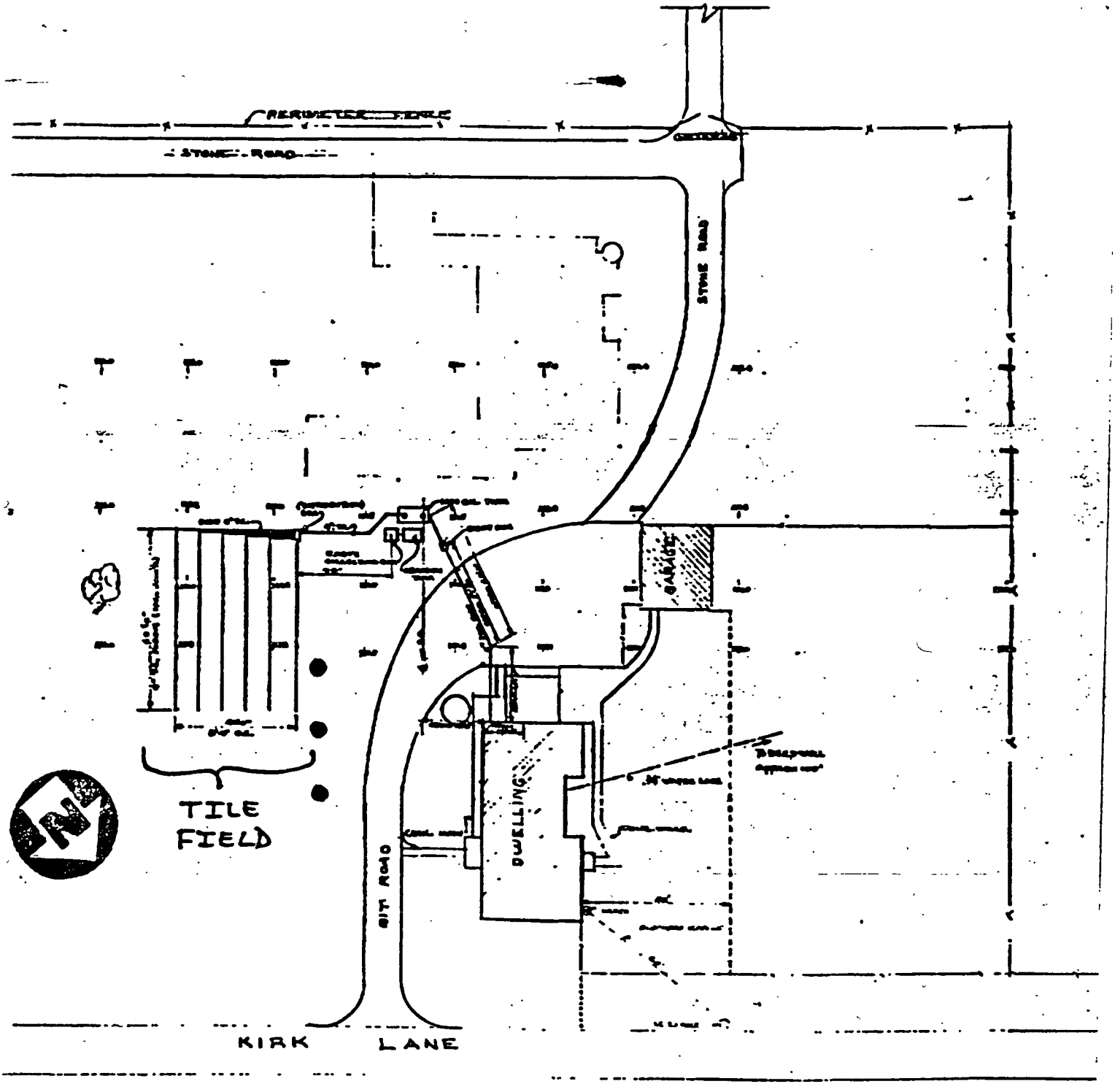
HALLIBURTON NUS Corporation

Adapted from SMC Environmental Services Group, 1991

DATE 09/25/95

PROPOSED SUBSURFACE SOIL BORING

ATTACHMENT III
SUBSURFACE SOIL SAMPLE LOCATIONS
PHASE III RI
COMMANDER'S TILE FIELD



PLAN

ACTUAL FIELD SURVEY
QUARTERS "A"
PLAN

SK.# 1228

ATTACHMENT III
PHASE III RI
SUBSURFACE SOIL SAMPLE LOCATIONS
TILE FIELD
NAWC WARMINSTER, PA

DATE 09/25/95

PROPOSED SOIL BORING